

**REMARKS**

This application has been reviewed in light of the Office Action mailed on January 25, 2005. Claims 1-38 are pending in the application with Claims 1, 11, 21 and 30 being in independent form. No new matter or issues are believed to be introduced by the amendments.

(1) In the Office Action, Claims 1-5, 7-15, 17-24, 26-33 and 35-38 were rejected under 35 U.S.C. §103(a) over the article entitled "Color SuperHistograms for Video Representation", written by Dimitrova et al in view of U.S. Patent No. 5,805,733 issued to Wang et al. on September 8, 1998 ("Wang et al.").

Applicant respectfully submits that Claims 1, 11, 21 and 30 are patentably distinguishable over the prior art for at least the following reasons. In the Office Action, the Examiner states that Dimitrova teaches an apparatus, system, method and computer executable instructions comprising a visual summary controller capable of creating a visual summary of video material, wherein the visual summary controller is capable of extracting frame signatures (histograms) from keyframes of video material and capable of using the frame signatures to create superhistograms from the keyframes.

In the Office Action, Wang is cited for curing a deficiency in Dimitrova. Specifically, Wang is cited for teaching: *selecting representative keyframe images for each superhistogram to create a compact visual summary of the video material, wherein the representative images include at least one of the first image in each family histogram, the most meaningful image in*

*each superhistogram, a randomly chosen image and an image that is closest to the cluster center.*

It is respectfully submitted that Wang does not cure the deficiencies of Dimitrova. Specifically, it is respectfully submitted that Wang does not teach: selecting representative keyframe images for each **superhistogram**, and wherein the representative images include at least one of - (1) the first image in each **family histogram**, (2) the most meaningful image in each **superhistogram**, (3) a randomly chosen image, (4) an image that is closest to the **cluster center**.

It is respectfully submitted that Wang does not cure the deficiencies of Dimitrova because Wang does not teach or disclose the use of the terms, "superhistogram", "family histogram" and "cluster center" which have a precise meaning as defined in the specification. Each of the defined terms are based on a non-temporal ordering of frames. In sharp contrast, the selection of representative keyframe images in Wang is strictly based on a temporal ordering of frames.

It is instructive to briefly review the system and method of Wang for summarizing scenes. Wang teaches in the abstract that a method and system for summarizing scenes includes a first step of scene detection followed by scene comparison of the detected scenes in a moving window to determine similarity between the detected scenes. Thereafter, similar scenes are consolidated and represented by a representative frame. Wang further defines candidates for representative frames.

To further illustrate the method of Wang for summarizing scenes, an example is provided that accords with the flowchart of Fig. 2 of Wang.

Consider a simplified video sequence comprised of 200 frames for ease of explanation.

At step 203 of the flowchart of Fig. 2 of Wang, a scene change detector detects scene changes.

Assume, the video sequence is comprised of 10 scene changes, as follows:

Scene 1	– made up of frames 1-20	(outdoor scene)
Scene 2	– made up of frames 21-77	(indoor scene)
Scene 3	– made up of frames 78-160	(outdoor scene)
Scene 4	– made up of frames 161-203	(etc...)
Scene 5	– made up of frames 204-255	
Scene 6	– made up of frames 256-311	
Scene 7	– made up of frames 312-347	
Scene 8	– made up of frames 348-390	
Scene 9	– made up of frames 391-401	
Scene 10	– made up of frames 402-445	

Next, in accordance with the described method, the time duration of each scene  $M$  ( $M = 1$  to 10) is then determined from the difference in frame numbers between the first and last frames of a scene. For example, Scene 1 is comprised of 20 frames, and scene 2 is comprised of 56 frames and scene 3 is comprised of 82 frames and so on.

Next, Wang teaches at Col. 3, lines 41-44, at step 205, identifying disparate related scenes and consolidating the video sequence into a smaller number of scenes. Assume that in the example, scenes 1, 3, 5 and 9 constitute disparate related scenes to be consolidated. The related scenes are then time ordered at step 207 and displayed at step 209, showing a representative frame from each set of related scenes.

It is apparent from the foregoing that the method of Wang for summarizing scenes is based on a temporal ordering of frames.

With regard to the selection of a representative frame image, Wang teaches at Col. 3, lines 37-66, a representative frame image can be taken from the temporally medial scene in the set or from one of the frames of the longest scene in the set of related scenes.

In the Examiner's Response to Arguments, the Examiner maintains that the Claim recitation: an image that is closest to the **cluster center** is taught by Wang. The Examiner maintains that the recitation: *the temporally medial scene in the set*, may be interpreted as a frame that is halfway between the first and last scenes. The Examiner further states; the frame can be taken from the middle, or center, of the cluster of scenes.

Further, in the Examiner's Response to Arguments, the Examiner maintains that the Claim recitation: the most meaningful image in each **superhistogram** is taught by Wang. The Examiner maintains that the recitation: *from one of the frames of the longest scene in the set of related scenes*, may be interpreted as a frame that is most indicative of the contents of the related scene (the most meaningful frame in the group).

In response to the Examiner's Response to Arguments, Applicants maintain that Wang does not teach or disclose { an image that is closest to the **cluster center** } or { the most meaningful image in each **superhistogram** }. This is true because Wang teaches the selection of representative frames based on a temporal ordering of frames as discussed above.

In sharp contrast, selection of a representative frame, as taught in the invention, is not based on such a temporal ordering. The terms "superhistogram", "family histogram" and "cluster center", are all based on a non-temporal ordering of frames as defined in the specification. While Applicants readily acknowledge that the Examiner must give the pending claims their broadest interpretation, consistent with the specification, Applicants submit that when Applicants choose to define terms as lexicographers in the specification, such as the terms "superhistogram", "family histogram" and "cluster center" it is incumbent upon the Examiner to analyze the Claim language in light of the their ascribed definitions in the specification in order to achieve a

complete exploration of the applicant's invention and its relation to the prior art. Support is found in the MPEP at 2173.05(a), where it states

**MPEP 2173.05(a)**

The meaning of every term used in a claim should be apparent from the prior art or from the specification and drawings at the time the application is filed. Applicants need not confine themselves to the terminology used in the prior art, but are required to make clear and precise the terms that are used to define the invention whereby the metes and bounds of the claimed invention can be ascertained. During patent examination, the pending claims must be given the broadest reasonable interpretation consistent with the specification. *In re Morris*, 127 F.3d 1048, 1054, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); *In re Prater*, 415 F.2d 1393, 162 USPQ 541 (CCPA 1969). See also MPEP § 2111 - § 2111.01. When the specification states the meaning that a term in the claim is intended to have, the claim is examined using that meaning, in order to achieve a complete exploration of the applicant's invention and its relation to the prior art. *In re Zletz*, 893 F.2d 319, 13 USPQ2d 1320 (Fed. Cir. 1989).

The non-temporal attributes of the terms "superhistogram", "family histogram" and "cluster center" are clearly defined in the specification and are based on a non-temporal ordering of frames. Wang does not teach or disclose the use of these terms and as such cannot teach the selection of a representative frame based on their use.

Accordingly, applicant respectfully requests that the rejection under 35 U.S.C. §103(a) with respect to Claims 1, 11, 21 and 30 and allowance thereof is respectfully requested.

Additionally, Claims 2-5, 7-10, 12-15, 17-20, 22-24, 26-29, 31-33 and 35-38 depend from independent Claims 1, 11, 21 and 30, respectively and therefore contain the limitations of Claims 1, 11, 21 and 30. Hence, for at least the same reasons given for Claims 1, 11, 21 and 30, Claims 2-5, 7-10, 12-15, 17-20, 22-24, 26-29, 31-33 and 35-38 are believed to be allowable over the cited reference. Accordingly, withdrawal of the rejection under 35 U.S.C. §102(b) with

respect to Claims 2-5, 7-10, 12-15, 17-20, 22-24, 26-29, 31-33 and 35-38 and allowance thereof is respectfully requested.

In view of the foregoing amendments and remarks, it is respectfully submitted that all claims presently pending in the application, namely, Claims 1-5, 7-10, 11-15, 17-20, 21-24, 26-29, 30-33 and 35-38 are believed to be in condition for allowance and patentably distinguishable over the art of record.

If the Examiner should have any questions concerning this communication or feels that an interview would be helpful, the Examiner is requested to call Dicron Halajian, Esq., Intellectual Property Counsel, Philips Electronics North America Corp., at 914-333-9607.

Respectfully submitted,



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